

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

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CENTRAL FAX CENTER****NOV 01 2007****Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims:

Please amend the claims as follows without prejudice. No new matter has been added by way of these amendments.

We claim:

1. (Currently Amended) A method of well planning in a well planning system in response to input data including wellbore geometry and wellbore trajectory requirements, comprising the step of:

generating a summary of a drillstring for each hole section of a wellbore in response to said input data, the summary providing a drillstring design for the wellbore geometry of each hole section of the wellbore.

2. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore comprises the step of: generating an outer diameter of a first drill collar of said drillstring.

3. (Previously Presented) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a second drill collar of said drillstring.

4. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a heavy weight of said drillstring.

5. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a drill pipe of said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

6. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a maximum weight of a weight-on-bit in each hole section of said drill string.
7. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a first drill collar of said drillstring.
8. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a second drill collar of said drillstring.
9. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a heavy weight of said drillstring.
10. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a first drill collar of said drillstring.
11. (Previously Presented) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a second drill collar of said drillstring.
12. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a heavy weight of said drillstring.
13. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a drill pipe of said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

14. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a tensile risk of said drillstring.

15. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a cost figure associated with said drillstring.

16. (original) The method of claim 1, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a kick tolerance associated with said drillstring.

17. (original) The method of claim 2, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a second drill collar of said drillstring.

18. (original) The method of claim 17, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a heavy weight of said drillstring.

19. (original) The method of claim 18, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a drill pipe of said drillstring.

20. (original) The method of claim 19, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a maximum weight of a weight-on-bit in each hole section of said drill string.

21. (original) The method of claim 20, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a first drill collar of said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

22. (original) The method of claim 21, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a second drill collar of said drillstring.

23. (original) The method of claim 22, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a heavy weight of said drillstring.

24. (original) The method of claim 23, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a first drill collar of said drillstring.

25. (original) The method of claim 24, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a second drill collar of said drillstring.

26. (original) The method of claim 25, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a heavy weight of said drillstring.

27. (original) The method of claim 26, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a drill pipe of said drillstring.

28. (original) The method of claim 27, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a tensile risk of said drillstring.

29. (original) The method of claim 28, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a cost figure associated with said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

30. (original) The method of claim 29, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a kick tolerance associated with said drillstring.

31. (Currently Amended) A program storage device readable by a machine tangibly embodying a program of instructions executable by the machine to perform method steps for well planning in a well planning system in response to input data including wellbore geometry and wellbore trajectory requirements, said method steps comprising:

generating a summary of a drillstring for each hole section of a wellbore in response to said input data, the summary providing a drillstring design for the wellbore geometry of each hole section of the wellbore.

32. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore comprises the step of: generating an outer diameter of a first drill collar of said drillstring.

33. (Previously Presented) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a second drill collar of said drillstring.

34. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a heavy weight of said drillstring.

35. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a drill pipe of said drillstring.

36. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a maximum weight of a weight-on-bit in each hole section of said drill string.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

37. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a first drill collar of said drillstring.

38. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a second drill collar of said drillstring.

39. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a heavy weight of said drillstring.

40. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a first drill collar of said drillstring.

41. (Previously Presented) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a second drill collar of said drillstring.

42. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a heavy weight of said drillstring.

43. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a drill pipe of said drillstring.

44. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a tensile risk of said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

45. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a cost figure associated with said drillstring.

46. (original) The program storage device of claim 31, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a kick tolerance associated with said drillstring.

47. (original) The program storage device of claim 32, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a second drill collar of said drillstring.

48. (original) The program storage device of claim 47, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a heavy weight of said drillstring.

49. (original) The program storage device of claim 48, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating an outer diameter of a drill pipe of said drillstring.

50. (original) The program storage device of claim 49, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a maximum weight of a weight-on-bit in each hole section of said drill string.

51. (original) The program storage device of claim 50, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a first drill collar of said drillstring.

52. (original) The program storage device of claim 51, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a second drill collar of said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

53. (original) The program storage device of claim 52, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a weight of a heavy weight of said drillstring.

54. (original) The program storage device of claim 53, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a first drill collar of said drillstring.

55. (Previously Presented) The program storage device of claim 54, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a second drill collar of said drillstring.

56. (original) The program storage device of claim 55, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a heavy weight of said drillstring.

57. (original) The program storage device of claim 56, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a length of a drill pipe of said drill string.

58. (original) The program storage device of claim 57, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a tensile risk of said drillstring.

59. (original) The program storage device of claim 58, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a cost figure associated with said drillstring.

60. (original) The program storage device of claim 59, wherein the step of generating a summary of a drillstring in each hole section of a wellbore further comprises the step of: generating a kick tolerance associated with said drillstring.

61. (original) The method of claim 1, further comprising the step of:

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

recording or displaying at least a portion of said summary of said drillstring in said each hole section of said wellbore on a recorder or display device.

62. (original) The method of claim 61, wherein the step of recording or displaying at least a portion of said summary of said drillstring in said each hole section of said wellbore on a recorder or display device is selected from a group consisting of:

recording or displaying an outer diameter of a first drill collar of said drillstring;

recording or displaying an outer diameter of a second drill collar of said drillstring;

recording or displaying an outer diameter of a heavy weight of said drillstring;

recording or displaying an outer diameter of a drill pipe of said drillstring;

recording or displaying a maximum weight of a weight-on-bit in each hole section of said drill string;

recording or displaying a weight of a first drill collar of said drillstring; recording or displaying a weight of a second drill collar of said drillstring;

recording or displaying a weight of a heavy weight of said drillstring;

recording or displaying a length of a first drill collar of said drillstring;

recording or displaying a length of a second drill collar of said drillstring;

recording or displaying a length of a heavy weight of said drillstring;

recording or displaying a length of a drill pipe of said drillstring;

recording or displaying a tensile risk of said drillstring; recording or displaying a cost figure associated with said drillstring; and

recording or displaying a kick tolerance associated with said drillstring.

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

63. (original) The program storage device of claim 31, further comprising the step of: recording or displaying at least a portion of said summary of said drillstring in said each hole section of said wellbore on a recorder or display device.

64. (original) The program storage device of claim 62, wherein the step of recording or displaying at least a portion of said summary of said drillstring in said each hole section of said wellbore on a recorder or display device is selected from a group consisting of: recording or displaying an outer diameter of a first drill collar of said drillstring; recording or displaying an outer diameter of a second drill collar of said drillstring; recording or displaying an outer diameter of a heavy weight of said drillstring; recording or displaying an outer diameter of a drill pipe of said drillstring; recording or displaying a maximum weight of a weight-on-bit in each hole section of said drill string; recording or displaying a weight of a first drill collar of said drillstring; recording or displaying a weight of a second drill collar of said drillstring; recording or displaying a weight of a heavy weight of said drillstring; recording or displaying a length of a first drill collar of said drillstring; recording or displaying a length of a second drill collar of said drillstring; recording or displaying a length of a heavy weight of said drillstring; recording or displaying a length of a drill pipe of said drillstring; recording or displaying a tensile risk of said drillstring; recording or displaying a cost figure associated with said drillstring; and recording or displaying a kick tolerance associated with said drillstring.

65. (Currently Amended) A method of generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, comprising the steps of:

generating a summary of a drillstring for each hole section of a wellbore in response to said input data, the summary providing a drillstring design for the wellbore geometry of each hole section of the wellbore, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of:

an outer diameter of a first drill collar of said drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and

recording or displaying said summary of said drill string in said each hole section of said wellbore.

66. (Currently Amended) A program storage device readable by a machine tangibly embodying a program of instructions executable by the machine to perform method steps for generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, said method steps comprising:

generating a summary of a drillstring for each hole section of a wellbore in response to said input data, the summary providing a drillstring design for the wellbore geometry of each hole section of the wellbore, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of:

an outer diameter of a first drill collar of said drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and

Appl. No. 10/802,545

Response Dated November 1, 2007

Reply to Final Office Action Dated June 1, 2007

recording or displaying said summary of said drill string in said each hole section of said wellbore.

67. (Currently Amended) A system adapted for generating and recording or displaying drillstring design output data associated with a drillstring in a wellbore in response to input data including wellbore geometry and wellbore trajectory requirements, comprising:

apparatus adapted for generating a summary of a drillstring for each hole section of a wellbore in response to said input data, the summary providing a drillstring design for the wellbore geometry of each hole section of the wellbore, the summary of the drillstring in each hole section of said wellbore being selected from a group consisting of:

an outer diameter of a first drill collar of said drillstring, an outer diameter of a second drill collar of said drillstring, an outer diameter of a heavy weight of said drillstring, an outer diameter of a drill pipe of said drillstring, a maximum weight of a weight-on-bit in each hole section of said drill string, a weight of a first drill collar of said drillstring, a weight of a second drill collar of said drillstring, a weight of a heavy weight of said drillstring, a length of a first drill collar of said drillstring, a length of a second drill collar of said drillstring, a length of a heavy weight of said drillstring, a length of a drill pipe of said drillstring, a tensile risk of said drillstring, a cost figure associated with said drillstring, and a kick tolerance associated with said drillstring; and

recorder or display apparatus adapted for recording or displaying said summary of said drill string in said each hole section of said wellbore.